wherein the T1R3 polypeptide is encoded by a nucleotide sequence that hybridizes under moderately stringent hybridization conditions to a nucleotide sequence encoding an amino acid sequence of SEQ ID NO:15, 20, 23, or 25; and

wherein the heterologous polypeptide is a T1R2 polypeptide encoded by a nucleotide sequence that hybridizes under moderately stringent hybridization conditions to a nucleotide sequence encoding an amino acid sequence of SEQ ID NO:7, 8, or 9; and

(ii) determining the functional effect of the compound upon the receptor, thereby identifying a compound that modulates sweet signal transduction.

cont.

56. (New) The method of claim 55, wherein the T1R2 polypeptide is encoded by a nucleotide sequence that hybridizes under highly stringent hybridization conditions to a nucleotide sequence encoding an amino acid sequence of SEQ ID NO:7, 8, or 9.

57. (New) The method of claim 55, wherein the T1R2 polypeptide has an amino acid sequence of SEQ ID NO:6, 7, or 8.

58. (New) The method of claim 55, wherein the receptor is recombinant.

59. (New) The method of claim 55, wherein the receptor has G protein coupled receptor activity.

60. (New) The method of claim 55, wherein the functional effect is measured *in vitro*.

61. (New) The method of claim 60, wherein the functional effect is a physical effect.

62. (New) The method of claim 60, wherein the receptor is linked to a solid phase.

63. (New) The method of claim 60, wherein the functional effect is determined by measuring binding of a compound to the receptor.

64. (New) The method of claim 63, wherein the functional effect is determined by measuring binding of a compound to the extracellular domain of the receptor.

65. (New) The method of claim 55, wherein the receptor is expressed in a cell or cell membrane.

B' cont.

66. (New) The method of claim 65, wherein the functional effect is a physical effect.

67. (New) The method of claim 66, wherein the functional effect is determined by measuring ligand binding to the receptor.

68. (New) The method of claim 67, wherein the functional effect is determined by measuring binding of a compound to the extracellular domain of the receptor.

69. (New) The method of claim 65, wherein the functional effect is a chemical or phenotypic effect.

70. (New) The method of claim 69, wherein the functional effect is determined by measuring changes in intracellular cAMP, IP3, or Ca2+.

71. (New) The method of claim 65, wherein the cell is a mammalian cell.

72. (New) The method of claim 71, wherein the cell is a human cell.

73. (New) The method of claim 55, wherein the T1R2 polypeptide and the T1R3 polypeptide are non-covalently linked.